







Most Company has an opportunity to invest in one of two new projects. Project Y requires a $350,000 investment for new machinery with a four-year life and no salvage value. Project Z requires a $350,000 investment for new machinery with a three-year life and no salvage value. The two projects yield the following predicted annual results. The company uses straight-line depreciation, and cash flows occur evenly throughout each year

 Project Y Project Z

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  Sales |   | $ | 395,000 |   |   |   | $ | 325,000 |   |   |
|   Expenses |   |   |   |   |   |   |   |   |   |   |
|       Direct materials |   |   | 55,300 |   |   |   |   | 40,625 |   |   |
|       Direct labor |   |   | 79,000 |   |   |   |   | 48,750 |   |   |
|       Overhead including depreciation |   |   | 142,200 |   |   |   |   | 146,250 |   |   |
|       Selling and administrative expenses |   |   | 28,000 |   |   |   |   | 29,000 |   |   |
|    |   |  |  |   |   |   |  |  |   |   |
|   Total expenses |   |   | 304,500 |   |   |   |   | 264,625 |   |   |
|    |   |  |  |   |   |   |  |  |   |   |
|   Pretax income |   |   | 90,500 |   |   |   |   | 60,375 |   |   |
|   Income taxes (26%) |   |   | 23,530 |   |   |   |   | 15,698 |   |   |
|    |   |  |  |   |   |   |  |  |   |   |
|   Net income |   | $ | 66,970 |   |   |   | $ | 44,677 |   |   |
|    |   |  |  |   |   |   |  |  |   |   |
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| **1.** | Compute each project’s annual expected net cash flows.

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|  | **Project Y** | **Project Z** |
| Net income | $66,970 | $44,677 |
| Depreciation expense |  |  |
|  |  |  |
| Expected net cash flows |  |  |

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| **2.** | Determine each project’s payback period |

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| **Payback period** |
|  | **Choose Numerator:** | **/** | **Choose Denominator:** | **=** | **Payback period** |
|  | ? | / | ? | = | Payback period |
| Project Y |  |  |  | = | 0 |  |
| Project Z |  |  |  | = | 0 |  |

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| **3.** | Compute each project’s accounting rate of return. |

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| **Accounting rate of return** |
|  | **Choose Numerator:** | **/** | **Choose Denominator:** | **=** | **Accounting rate of return** |
|  | ? | / | ? | = | Accounting rate of return |
| Project Y |  |  |  |  | 0 |  |
| Project Z |  |  |  |  |  |  |

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| **4.** | Determine each project’s net present value using 9% as the discount rate. Assume that cash flows occur at each year-end |

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| **Project Y** |
| **Chart values are based on:** |
| *n =* |  |  |
| *i =* |  |
| **Select chart** | **Amount** | **x** | **Table factor** | **=** | **Present Value** |
| ? |  |  |  | = | $0 |
|  |
|  |  |  |
|  |  |  |
| Net present value |  |  |
|  |
| **Project Z** |
| **Chart values are based on:** |
| *n =* |  |  |
| *i =* |  |
| **Select chart** | **Amount** | **x** | **Table factor** | **=** | **Present Value** |
|  |  |  |  | = | $0 |
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|  |  |  |
|  |  |  |
| Net present value |  |  |

Part 2:









Manning Corporation is considering a new project requiring a $96,500 investment in test equipment with no salvage value. The project would produce $75,000 of pretax income before depreciation at the end of each of the next six years. The company’s income tax rate is 36%. In compiling its tax return and computing its income tax payments, the company can choose between the two alternative depreciation schedules shown in the table.

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| Straight-LineDepreciation | MACRSDepreciation |
| Year 1 |   | $ | 9,650 |   |   | $ | 19,300 |   |
| Year 2 |   |   | 19,300 |   |   |   | 30,880 |   |
| Year 3 |   |   | 19,300 |   |   |   | 18,528 |   |
| Year 4 |   |   | 19,300 |   |   |   | 11,117 |   |
| Year 5 |   |   | 19,300 |   |   |   | 11,117 |   |
| Year 6 |   |   | 9,650 |   |   |   | 5,558 |   |
|    |   |   |   |   |   |   |   |   |
| Totals |   | $ | 96,500 |   |   | $ | 96,500 |   |

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| **1.** | Complete the following table assuming use of straight-line depreciation. Net cash flow equals the amount of income before depreciation minus the income taxes. |

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|  | **Income Before Depreciation** | **Straight-Line Depreciation** | **Taxable Income** | **Income Taxes** | **Net Cash Flows** |
| Year 1 |  |  |  |  |  |
| Year 2 |  |  |  |  |  |
| Year 3 |  |  |  |  |  |
| Year 4 |  |  |  |  |  |
| Year 5 |  |  |  |  |  |
| Year 6 |  |  |  |  |  |

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| **2.** | Complete the following table assuming use of MACRS depreciation. Net cash flow equals the income amount before depreciation minus the income taxes. |

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|  | **Income Before Depreciation** | **MACRS Depreciation**  | **Taxable Income** | **Income Taxes** | **Net Cash Flows** |
| Year 1 |  |  |  |  |  |
| Year 2 |  |  |  |  |  |
| Year 3 |  |  |  |  |  |
| Year 4 |  |  |  |  |  |
| Year 5 |  |  |  |  |  |
| Year 6 |  |  |  |  |  |

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| **3.** | Compute the net present value of the investment if straight-line depreciation is used. Use 8% as the discount rate. |

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| **Chart values are based on:** |
| *i =* |  |  |
| **Year** | **Net cash inflow** | **x** | **Table factor** | **=** | **Present Value** |
| 1 |  |  |  | = |  |
| 2 |  |  |  | = |  |
| 3 |  |  |  | = |  |
| 4 |  |  |  | = |  |
| 5 |  |  |  | = |  |
| 6 |  |  |  | = |  |
|  |  |
|  |  |
| Net present value |  |

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| **4.** | Compute the net present value of the investment if MACRS depreciation is used. Use 8% as the discount rate. |

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| **Chart values are based on:** |
| *i =* |  |  |
| **Year** | **Net cash inflow** | **x** | **Table factor** | **=** | **Present Value** |
| 1 |  |  |  | = |  |
| 2 |  |  |  | = |  |
| 3 |  |  |  | = |  |
| 4 |  |  |  | = |  |
| 5 |  |  |  | = |  |
| 6 |  |  |  | = |  |
|  |  |
|  |  |
| Net present value |  |

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